

### **Abstract of the Disclosure**

The present invention relates to a novel method for the production of a high yield chemical pulp from softwood in a pulp mill by the application of a delignification catalyst in a wood impregnation step and by using alkaline pulping liquors comprising boron compounds at a white liquor sulfidity level below about 25 %. The method is practiced concurrently with a controlled sulfur chemicals management in the pulp mill thereby providing a pulping process which have low emission of odorous pollutants, low rate of corrosion in mill equipment and which has a rate of delignification and selectivity sufficient to produce softwood pulp in higher yield and at a quality at least on a par with a kraft pulping alternative.